

RULE 1128

Paper, Fabric, and Film Coating Operations

(a) Applicability

This rule applies to all persons applying coatings or wash primers to paper, fabric, or film substrates. The drying and curing processes covered under this rule include, but are not limited to, heated, forced-air dried, and non-heated processes.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

- (1) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground traffic/marketing applications.
- (2) APPLICATION PROCESS is any process where surface coatings are applied and/or cured to paper, fabric, and/or film on a coating line. Such coating line shall include coating applicators, heating or drying ovens, any dryers, and any other equipment where VOC emissions occur.
- (3) COATING means a layer of material applied on a substrate that forms a film.
- (4) DIE COATER (OR SLIT COATER) is a type of application equipment that coats an object by flowing coatings through a slit directly onto the object moving past the slit.
- (5) DIP COATER is a type of application equipment that coats an object by submerging the object in a vat of coating, and subsequently withdrawing the object and draining off the excess coating.
- (6) ELECTROSTATIC APPLICATION is a method of applying coating whereby atomized paint droplets are charged and subsequently deposited on the substrate by electrostatic attraction.
- (7) EXEMPT COMPOUNDS (See Rule 102-Definition of Terms).

- (8) **FABRIC COATING** is any decorative or protective coating or reinforcing material applied on or impregnated into textile fabric, vinyl coated textile fabric, or vinyl sheets.
- (9) **FILM COATING** is any coating applied in a web coating process on any film substrate other than paper or fabric, including, but not limited to typewriter ribbons, photographic film, magnetic tape, and metal foil gift wrap, but excluding coatings applied to packaging used exclusively for food and health-care products for human or animal consumption.
- (10) **FLOW COATER** is a type of application equipment that coats an object by flowing a stream of coating over the object and draining off any excess coating.
- (11) **FOAM COATER** is a type of application equipment that coats an object by flowing foam through holes or a slit directly onto the object moving underneath it.
- (12) **GRAMS OF VOC PER LITER OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS**, is the weight of VOC per combined volume of VOC and coating solids, and can be calculated by the following equation:

$$\begin{array}{l} \text{Grams of VOC per Liter of Coating, Less} \\ \text{Water and Less Exempt Compounds} \end{array} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where:

- W_s = weight of volatile compounds, in grams
- W_w = weight of water, in grams
- W_{es} = weight of exempt compounds, in grams
- V_m = volume of material, in liters
- V_w = volume of water, in liters
- V_{es} = volume of exempt compounds, in liters

- (13) **GRAMS OF VOC PER LITER OF MATERIAL** is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where:

- W_s = weight of volatile compounds, in grams
- W_w = weight of water, in grams
- W_{es} = weight of exempt compounds, in grams
- V_m = volume of material in liters

- (14) **HAND APPLICATION METHOD** is a method of applying a coating to a substrate using manually held, non-mechanically operated equipment. Such equipment includes paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

- (15) HEATING OVEN is a device into which paper, fabric or film is put in order to dry or cure the applied coating by applying heat.
- (16) HIGH VOLUME LOW PRESSURE (HVLP) SPRAY is an atomized coating application system which is operated between 0.1 and 10 psig air pressure at the air cap/tip of the spray gun.
- (17) PAPER COATING is any coating applied on or impregnated into paper, including, but not limited to, adhesive tapes and labels, book covers, post cards, office copier paper, drafting paper, and pressure sensitive tapes.
- (18) PLASTISOL is a coating that is a liquid dispersion of small particles of resins and plastisizers that are fused to become a plastic.
- (19) PLASTISIZER is a material used to keep plastic material soft and viscous.
- (20) ROLL COATER is a type of application equipment in which a series of mechanical rollers form a thin coating film on the surface of a roller, which is subsequently applied to a substrate by moving the substrate underneath the roller.
- (21) TRANSFER EFFICIENCY is the ratio of the weight or volume of coating solids adhering to an object to the total weight or volume, respectively, of coating solids used in the application process expressed as a percentage.
- (22) VOLATILE ORGANIC COMPOUND (VOC) is any volatile chemical compound which contains the element carbon excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.
- (23) WASH PRIMER is a material used to clean and/or to activate surfaces of paper, fabric, or film and may contain no more than five percent, by weight, solid materials.

(c) Requirements

- (1) Until January 1, 1994, a person shall not use or apply any coating in any paper, fabric, or film coating application process involving the use of heating ovens unless:
 - (A) the coating contains less than 265 grams of VOC per liter of coating, less water, and less exempt compounds, as applied, and is applied with a minimum transfer efficiency of 95 percent; or
 - (B) the VOC emissions are collected and reduced to less than 120 grams per liter of coating applied.

- (2) On or after January 1, 1994, a person shall not use or apply any coating in any paper, fabric or film coating application process, with or without heating ovens, unless:
 - (A) The coating contains less than 265 grams of VOC per liter of coating less water, and less exempt compounds, as applied; or
 - (B) VOC emissions are collected and reduced by an approved emission control system pursuant to subdivisions (d) and (j).
- (3) A person shall not use or apply any plastisol to any paper, fabric, or film substrate unless the coating contains less than 20 grams of VOC per liter of coating, less water, and less exempt compounds, as applied.
- (4) Until January 1, 1994, a person shall not use wash primer on any paper, fabric, and/or film used in any paper, fabric, and/or film coating application process involving the use of heating ovens, unless:
 - (A) the wash primer contains less than 265 grams of VOC per liter of material used, or
 - (B) the VOC emissions from the washing operations are collected and reduced to less than 120 grams per liter of washing material used.
- (5) On or after January 1, 1994, a person shall not use wash primer on any paper, fabric, and/or film used in any paper, fabric, and/or film coating application process, with or without heating ovens, unless:
 - (A) The wash primer contains less than 265 grams of VOC per liter of material used, or
 - (B) VOC emissions are collected and reduced by an approved emission control system, pursuant to subdivisions (d) and (j).
- (6) Application Methods

On or after January 1, 1994, no person shall apply coatings, unless these materials are applied with equipment operated according to manufacturer's specifications, and by the use of one of the following methods:

 - (A) Flow Coater;
 - (B) Roll Coater;
 - (C) Dip Coater;
 - (D) Foam Coater;
 - (E) Die Coater;

- (F) Hand Application Methods;
 - (G) High-Volume Low-Pressure (HVLP) spray, only for air-dried coatings; or
 - (H) Such other alternative spray application methods as are demonstrated in accordance with the provisions of paragraph (f)(4), to be capable of achieving equivalent or better transfer efficiency than the application method listed in subparagraph (c)(6)(G), and for which written approval of the Executive Officer has been obtained;
- (7) Containers for organic solvents and mixing tanks for coatings containing organic solvents shall be free from leaks and shall be covered except when adding or removing materials, cleaning, or when the container is empty.
- (8) A person shall not:
- (A) use VOC-containing materials for the cleaning of application equipment used in paper, fabric, and/or film coating operations, excluding hand wiping, unless:
 - (i) 85 percent of the VOCs are collected and properly disposed of in such a way that they are not emitted into the atmosphere; or
 - (ii) the clean-up materials contain 15 percent or less, by weight, VOC.
 - (B) use other than closed containers for disposal of cloth or paper used for surface preparation, clean-up, and the removal of uncured coatings, which are impregnated with solvent containing VOC.
 - (C) use other than closed containers for disposal of cloth or paper used in stripping cured coatings, which are impregnated with solvent containing VOC.
- (9) Solvent Cleaning Operations: Storage and Disposal of VOC Containing Materials
- Subparagraphs (c)(8)(A), (c)(8)(B) and hand wipe cleaning of application equipment used in paper, fabric, and/or film coating operations shall be superseded by paragraphs (c)(1), (c)(2), (c)(4), and (c)(6) of Rule 1171 - Solvent Cleaning Operations, on and after July 1, 1992.

(d) **Approved Emission Control System**

A person may comply with the provisions of paragraph (c)(2), (c)(5) or (c)(6) by using an emission control system for reducing VOC emissions consisting of collection and control devices, which are approved, in writing, by the Executive Officer and installed in accordance with the Compliance Schedule of subdivision (j) and operated subject to the following provisions:

- (1) The emission collection system shall collect at least 90 percent, by weight, of the emissions generated by the source of emissions.
- (2) The control device shall reduce emissions from an emission collection system by at least 95 percent, by weight, or the output of the control device is 50 ppm, by volume, calculated as carbon, with no dilution.

(e) **Recordkeeping Requirements**

Records shall be maintained pursuant to Rule 109.

(f) **Compliance Test Methods**

For the purpose of this rule, the following test methods shall be used.

- (1) The VOC content of materials subject to the provisions of this rule shall be determined by:
 - (A) The United States Environmental Protection Agency (USEPA) Reference Method 24 (Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A). The exempt compound's content shall be determined by the South Coast Air Quality Management District's (SCAQMD) Laboratory Methods of Analysis for Enforcement Samples - Section III, Methods 19 and 22; or
 - (B) SCAQMD's Laboratory Methods of Analysis for Enforcement Samples - Section III, Methods 16, 17, 19, 22, and 24.

VOC emissions determined to exceed any limits established by this rule through the use of the above-referenced sets of test methods shall constitute a violation of the rule.

- (2) The capture efficiency of the emissions collection system shall be determined by the USEPA method cited in 55 FR (Federal Register) 26865, June 29, 1990.

- (3) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by USEPA's Test Method 18, or Air Resources Board (ARB) Method 422 for the determination of emissions of Exempt Compounds and USEPA's Test Methods 25, 25A, or SCAQMD's Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) for the determination of total organic compound emissions. Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of the rule.
- (4) The transfer efficiency of alternative coating application methods shall be determined in accordance with SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989."

The following classes of compounds: cyclic branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-contained perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with subdivision (c), only at such time as manufacturers specify which individual compounds are used in the coating formulations and identify the test methods, which, prior to such analysis, have been approved by the USEPA and the SCAQMD, that can be used to quantify the amounts of each exempt compound.

(g) **Rule 442 Applicability**

Any coating, coating operation, or facility which is exempt from all or a portion of this rule, shall comply with the provisions of Rule 442.

(h) **Alternative Emission Control Plan**

An owner/operator may comply with subparagraph (c)(1)(A) or (c)(2)(A) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(i) **Exemptions**

- (1) Until January 1, 1994, the provisions of subdivision (c) shall not apply to any coating application facility which applies less than two gallons of coatings per day.
- (2) The provisions of this rule shall not apply to aerosol coating products.

- (3) The provisions of subparagraph (c)(6) shall not apply to the application of materials that contain less than 20 g/L of VOC per liter of material.
- (4) The provisions of subdivision (c) shall not apply to laboratories which apply less than two (2) gallons per day of coatings to test specimens for purposes of testing for production-related operations, research, development, and quality control.
- (5) The provisions of this rule shall not apply to the application of coatings to fine arts paintings, or to scenic or theatrical backgrounds for motion pictures, television, and theater.
- (6) The provisions of subdivision (c) shall not apply to laboratories located at facilities that manufacture reinforced plastic, structural materials, which apply no more than three (3) gallons per day of coatings to test specimens for either testing production-related operations, research, development, or quality control.

(j) **Compliance Schedule**

Persons complying with the provisions of subdivision (d) shall comply with the following increments of progress to achieve compliance:

- (1) By July 1, 1992, submit required applications for permits to construct and operate, to achieve compliance with paragraphs (c)(2), (c)(5), or (c)(6).
- (2) By January 1, 1994, demonstrate compliance with paragraphs (c)(2), (c)(5), or (c)(6).

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